Self-Implementing TSCA Work Plan
Substation V-94 Removal and Disposal
North Boeing Field
Seattle, Washington

April 16, 2014

Prepared for

The Boeing Company

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1.0 INTRODUCTION

This document presents a work plan for the removal and disposal of the V-94 Substation at North Boeing Field (NBF) located in Seattle, Washington (Figure 1). Sampling results for the surface soil debris at the western edge of the concrete transformer pad at Substation V-94 indicate the presence of polychlorinated biphenyls (PCBs). Surface soil debris was sampled as part of the environmental sampling efforts supporting the demolition of the 3-818 building, located east of the substation. Boeing plans to begin demolition of the 3-818 building in March 2014. This work plan describes the methods to be employed for removal of PCB-containing concrete, asphalt, soil, and surface debris in the vicinity of Substation V-94.

PCBs were detected at a concentration greater than 50 milligrams per kilogram (mg/kg; up to 280 mg/kg) in the surface soil debris at the western edge of the concrete transformer pad at Substation V-94. Therefore, the removal and disposal of the concrete and surface soil debris associated with Substation V-94 will be conducted in accordance with the Toxics Substances Control Act (TSCA) under the requirements of the self-implementing procedure for the cleanup and disposal of PCB remediation waste [40 C.F.R. § 761.61 (a)]. All material (concrete and surface soil debris) will be assumed to have concentrations of PCBs greater than 50 mg/kg and additional characterization sampling will not be conducted prior to removal and disposal of Substation V-94, with the exception of asphalt samples from the perimeter of the substation and storm drain solid samples collected from adjacent catch basins as described in Section 2.0. Confirmation sampling will be performed in the soil footprint of Substation V-94 following removal and disposal of the concrete and surface soil debris associated with the substation. Substation V-94 is shown on Figure 2. Photos of Substation V-94 are shown on Figure 3.

This work plan provides a description of the procedures to be used for removal and disposal of Substation V-94 (Section 2.0), procedures for confirmation sampling (Section 3.0), and a plan to address the health and safety of personnel supporting the substation removal, waste disposal, and confirmation sampling activities (Section 4.0).

2.0 SUBSTATION REMOVAL AND DISPOSAL ACTIVITIES

Removal and disposal of the concrete transformer pad and surface soil debris associated with Substation V-94 will be conducted in a manner that minimizes the release of PCBs to the environment and allows for proper disposal of the material. The substation removal and disposal will be performed by qualified construction contractors selected by Boeing, who are familiar with such work and have had the health and safety training described in Section 4.0. The contractor will work with Boeing prior to beginning removal and disposal activities to initiate procedures that will be used to reduce the potential for deposition of PCB-contaminated construction debris on nearby paved surfaces that could potentially be discharged to the stormwater drainage system. The contractor will place plastic sheeting or other protective barriers over paved surfaces adjacent to the cleanup area to eliminate the need for decontamination of paved areas and decontamination of cleaning equipment (such as street sweepers and vacuums) following cleanup. Plastic sheeting and barriers will be monitored for rips and tears that may occur due to vehicle traffic and will be replaced immediately if damage is observed.

The transformer, associated electrical equipment, and underground electrical lines are still present at the substation, and will be removed prior to removal and disposal of the concrete transformer pad. The transformer will be drained and the transformer oil will be disposed of in accordance with the Washington State Dangerous Waste Requirements. The transformer oil has been tested and does not contain PCBs above the TSCA criteria of 50 parts per million (ppm). The transformer and associated electrical equipment will be sold for reuse or for scrap.

2.1 PCB CHARACTERIZATION RESULTS

As described in Section 1.0, PCBs were detected at a concentration greater than 50 mg/kg in a composite sample of surface soil debris accumulated on the asphalt at the western edge of the concrete transformer pad at Substation V-94. Based on the results for this sample, all substation pad and curb concrete, and associated surface soil debris, will be disposed of as TSCA material under the self-implementing procedures described in this work plan.

Additional characterization samples were collected from the asphalt surrounding the perimeter of the substation. Two asphalt samples were collected from each side of the substation. All asphalt samples results were below 1 mg/kg with the exception of one sample on the north side of the substation where PCBs were detected at 1.2 mg/kg. This section of asphalt will be saw cut or mechanically broken-up and disposed of as TSCA material as defined in 40 C.F.R. § 761.61 (a)(4)(i) for the requirements of bulk PCB remediation waste with PCB concentrations greater than 1 mg/kg. This area of removed asphalt will be included in the confirmation sample area described in Section 3.0 below.

Storm drain solids from two catch basins (CB278 and CB279) in the vicinity of Substation V-94 were sampled. Total PCBs were not detected at CB278. Total PCBs were detected at a concentration

below 1.0 mg/kg at CB279 (0.22 mg/kg as-received and 0.54 mg/kg dry weight). Based on these results no additional cleaning or sampling will be performed at CB278 or CB279 as part of this work plan.

Locations of the PCB characterization samples described above are shown on Figure 2. All data is presented in Table 1.

2.2 RUNOFF CONTROL

Control measures will be implemented to capture wastewater, slurry, and debris generated during removal of concrete, soil, and surface debris, and to prevent potentially contaminated construction debris from entering the stormwater drainage system. The control measures to be implemented include the following:

- **Air-Powered Vacuums.** These will be used during concrete cutting activities and when removal activities are performed in times of light rain. However, concrete is expected to be broken into pieces, with little or no sawcutting work.
- **Weather Restrictions.** Removal of PCB-containing material will not be conducted during periods of significant rain.
- **Catch Basin Seals or Other Control Devices.** Prior to removal of the substation, the two catch basins in the vicinity of Substation V-94 (CB278 and CB279) will be blocked off with catch basin seals to eliminate the potential for debris to enter the storm drain system.

2.3 MANAGEMENT OF WASTE

All solid waste containing PCBs equal to or greater than 50 mg/kg will be shipped in Department of Transportation-compliant containers and disposed of in a Subtitle C landfill (a chemical waste landfill permitted under 40 C.F.R. § 761.75 to accept TSCA waste). PCB remediation waste known to contain PCBs less than 50 mg/kg will be managed in accordance with 40 C.F.R. § 761.61(a)(5)(i)(B)(*2*)(*ii*).

2.4 DECONTAMINATION

Non-disposable and nonporous equipment such as concrete saws and other construction tools that come into contact with PCB-contaminated concrete, soil, and surface debris will be decontaminated after each use. Decontamination after removal of the substation concrete, soil, and surface debris containing PCBs greater than or equal to 50 mg/kg will be performed using hand-wiping with an appropriate solvent in accordance with the decontamination procedures required under 40 C.F.R. § 761.79, or the equipment will be discarded as contaminated TSCA-waste and placed in a roll-off box to be disposed of at a Subtitle C chemical waste landfill permitted to accept TSCA waste under 40 C.F.R. § 761.75. Only parts of the equipment that are reasonably likely to have been in contact with PCB-containing materials will be decontaminated.

3.0 CONFIRMATION SAMPLE COLLECTION PROCEDURES

Confirmation samples will conform to 40 C.F.R. § 761.61(a)(6) and will be collected from the footprint of the area where Substation V-94 is removed. Self-implementing cleanup is complete when verification sampling yields PCBs results less than or equal to the target remediation level of 1.0 mg/kg, the interim action level previously determined by Ecology for NBF soil in areas where PCBs are not present in groundwater [based on the lowest direct contact Applicable or Relevant and Appropriate Requirements (ARARs) and the TSCA cleanup level for bulk PCBs remediation waste in high occupancy areas]. In the event that confirmation sampling yields concentrations greater than this level, additional excavation and removal of soil will be initiated per 40 C.F.R. § 761.61(a)(6)(ii)(B) and/or contingency measures will be implemented to prevent potential migration of or exposure to PCBs. If concentrations of soil remaining in place are greater than the target remediation level of 1.0 mg/kg, the area will be cleaned up according to the 40 C.F.R. §761.61(a) requirements applicable to high occupancy areas with PCB remediation waste remaining at concentrations greater than 1.0 mg/kg and less than or equal to 10 mg/kg.

Confirmation soil samples will be collected according to a 1.5-meter grid overlay system as defined in 40 C.F.R. § 761.280(b)(2). A sample will be collected from each grid intersection in the area of soil excavation. The exact orientation of the grid and number of confirmation samples to be collected will be determined in the field and will be based on magnetic north. Additional confirmation samples will be collected if inspection of conduit and wiring leading to the substation indicates the presence of preferential migration pathways. If wiring is coated with petroleum-based materials, the coating material will be sampled for PCBs. Soil grab samples will be collected around buried conduit or wiring if any evidence of oil stains or discolored soil is observed. Deeper confirmation samples may be collected, as needed, depending on sampling results.

In the event that confirmation samples yield total PCB concentrations greater than the target remediation level of 1.0 mg/kg, soil excavation will proceed vertically or horizontally to the extent practicable (i.e., additional excavation of soil is possible and does not endanger utilities or building foundations) and the confirmation sampling procedures will be repeated. Confirmation soil samples will be collected using a clean, stainless-steel spoon. Soil samples will be placed into an 8-ounce glass sample jar, labeled, and stored on ice.

3.1 SAMPLE DOCUMENTATION, HANDLING, AND ANALYSIS

A complete record of all field activities will be maintained. All recordkeeping will conform to 40 C.F.R. § 761.61(a)(9) and 40 C.F.R § 761.125(c)(5). Documentation will include field logbooks, field sampling forms, photographs, sample labels, chain-of-custody (COC) forms, and project and data

management file copies. Field logbooks will be used to record all field activities. Confirmation sample locations will be photo-documented with a digital camera, with some identification of the sample location in the photograph. Sample possession and handling will be documented so that the sample is traceable from the time of sample collection, to the laboratory, and through data analysis.

3.2 CHEMICAL ANALYSES

Confirmation samples will be transported to Boeing's contracted analytical laboratory, Analytical Resources Inc. (ARI), in Tukwila, Washington, within 24 hours of sample collection. All samples will be analyzed for PCB aroclors by U.S. Environmental Protection Agency (EPA) Method 8082 in accordance with 40 C.F.R. § 761.272. The anticipated reporting limit for each PCB aroclor is .035 mg/kg. Actual reporting limits may be higher or lower depending on laboratory interferences and other aroclor detections. Samples will be submitted to the analytical laboratory on a 24- to 48-hour requested turnaround time.

3.3 SAMPLE LABELING, SHIPPING, AND CHAIN-OF-CUSTODY

Each soil sample will be assigned a unique alphanumeric identifier that will include the sampling event identifier 3-818-V94, the sample location identification, the depth of the sample from below ground surface (BGS), and the date in month-day-year format. For example, the first soil sample collected from location S01, at 3 ft BGS, on March 31, 2014, will be identified as 3-818-V94-S01-3.0-033114.

Sample container labels will be completed immediately before or immediately following sample collection. Container labels and COC forms will include the project name (Boeing NBF), the Boeing project manager's name (Carl Bach), the project number (025082.514.001), the sample ID, the initials of the person collecting the sample, the date and time of collection, and the analysis required. Samples will be placed on ice in a sealed cooler immediately after collection and delivered or sent by courier to the contracted analytical laboratory by Landau Associates within 24 hours of sample collection. All samples submitted for analysis will be accompanied by a COC form, and all samples submitted to the laboratory that are not immediately analyzed will be frozen for archival purposes.

3.4 REPORTING

Upon completion of excavation activities, a report documenting the activities will be prepared that meets the requirements referenced at 40 C.F.R. § 761.61(a)(9) and 40 C.F.R § 761.125(c)(5). Reporting is further described in Section 5.0.

4.0 HEALTH AND SAFETY

A project health and safety plan (HASP) for implementation during removal and disposal of concrete, soil, and surface debris associated with Substation V-94 is provided in Appendix A. All personnel performing the work will follow the procedures described in this HASP or follow procedures in a HASP that is at least as protective as this plan.

5.0 REPORTING

Landau Associates will prepare a cleanup report documenting the implementation of this work plan. The cleanup report will include the dates during which Substation V-94 removal was conducted; the approximate amounts of material removed (cubic yardage of concrete, asphalt, soil, and surface debris); a description of the materials removed from the area of the substation; and figures showing the final removal footprint. The cleanup report will include the information required under 40 C.F.R. § 761.61(a)(9) and 40 C.F.R § 761.125(c)(5).

6.0 SCHEDULE

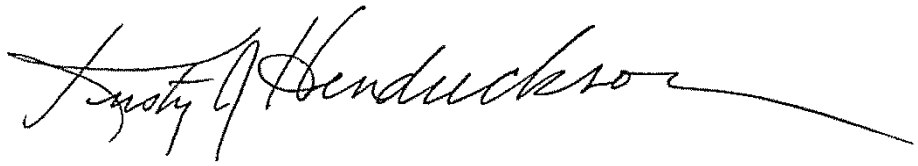
The removal and disposal of Substation V-94 described in this work plan is currently anticipated to be completed in conjunction with the 3-818 building demolition activities in 2014. The activities described in this work plan to be conducted under the TSCA self-implementing regulations will be initiated following the 30-day waiting period after submittal of this document to the EPA. The construction schedule is subject to change, depending on site construction activities, weather-related delays, and other site conditions.

* * * * * * * * * * *

This document has been prepared under the supervision and direction of the following key staff.

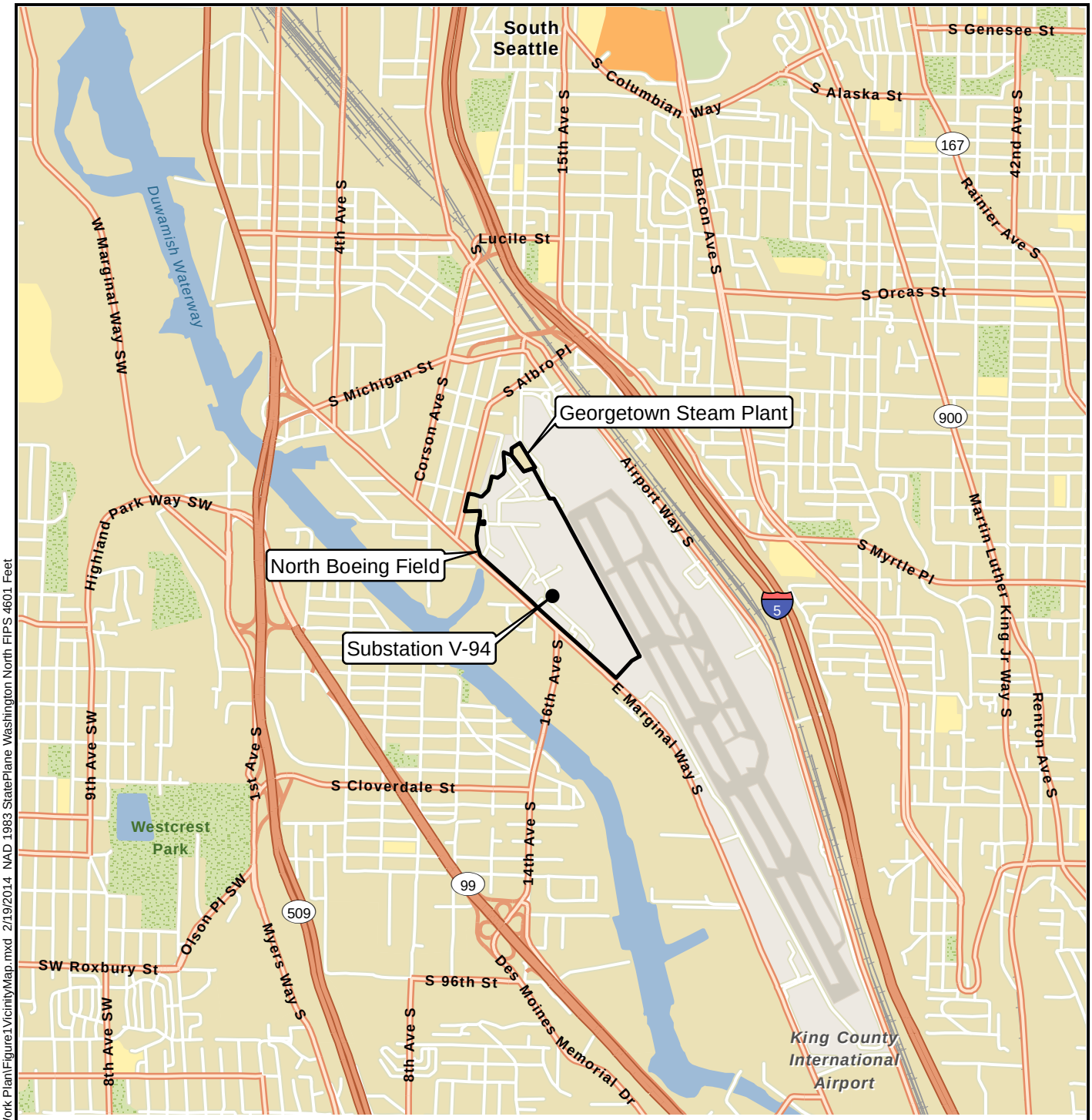
LANDAU ASSOCIATES, INC.

Colette M. Gaona
Senior Project Engineer



Kristy J. Hendrickson, P.E.
Principal

CMG/KJH/tam



Data Source: Esri 2012

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LANDAU ASSOCIATES

North Boeing Field Substation V-94 TSCA WP Seattle, Washington	**Vicinity Map**	Figure 1

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Legend

- Asphalt Sample Location
- Composite Surface Debris/ Soil Sample Location
- Substation V-94 Area
- South Lateral Drain Line
- 15 1-ft Contours
- Catch Basin
- Inlet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 25 50

Scale in Feet

Data Sources: Puget Sound Lidar Consortium: Esri World Imagery.

LANDAU ASSOCIATES

North Boeing Field
Substation V-94 TSCA WP
Seattle, Washington

Substation V-94 and PCB Characterization Sample Locations

Figure 2

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North Boeing Field
Substation V94 TSCA WP
Seattle, Washington

Substation V-94 Photos

Figure
3

TABLE 1
PCB ANALYTICAL RESULTS
SUBSTATION V-94 TSCA WORK PLAN
NORTH BOEING FIELD, SEATTLE WASHINGTON

Sample ID	3-818-V94Soil-Comp-013014	3-818-V94 Asphalt-S01-021014	3-818-V94 Asphalt-S02-021014	3-818-V94 Asphalt-W01-021014	3-818-V94 Asphalt-W02-021014	3-818-V94 Asphalt-W03-021014	3-818-V94 Asphalt-N01-021014	3-818-V94 Asphalt-N02-021014	3-818-V94 Asphalt-E01-021014	3-818-V94 Asphalt-E02-021014	CB278-021214 (As Received)	CB278-021214 (Dry Weight)	CB279-021214 (As Received)	CB279-021214 (Dry Weight)
Lab ID	151205	151420	151421	151422	151423	151424	151425	151426	151427	151428	1511498	1511498	1511499	1511499
Sample Date	1/30/2014	2/10/2014	2/10/2014	2/10/2014	2/10/2014	2/10/2014	2/10/2014	2/10/2014	2/10/2014	2/10/2014	2/12/2014	2/12/2014	2/12/2014	2/12/2014
PCBs (mg/kg)														
Method SW8082														
Aroclor 1221	0.028 U	0.020 U	0.019 U	0.020 U	0.019 U	0.021 U	0.023 U	0.020 U	0.020 U	0.020 U	0.016 U	0.040 U	0.016 U	0.039 U
Aroclor 1232	0.028 U	0.020 U	0.019 U	0.020 U	0.019 U	0.021 U	0.023 U	0.020 U	0.020 U	0.020 U	0.016 U	0.040 U	0.016 U	0.039 U
Aroclor 1016-1242	0.028 U	0.020 U	0.019 U	0.020 U	0.019 U	0.021 U	0.023 U	0.020 U	0.020 U	0.020 U	0.016 U	0.040 U	0.016 U	0.039 U
Aroclor 1248	0.028 U	0.020 U	0.019 U	0.020 U	0.019 U	0.021 U	0.023 U	0.020 U	0.020 U	0.020 U	0.016 U	0.040 U	0.016 U	0.039 U
Aroclor 1254	**46**	**0.25**	**0.34**	0.020 U	**0.39**	0.021 U	0.023 U	**0.30**	0.020 U	0.020 U	0.016 U	0.040 U	**0.22**	**0.54**
Aroclor 1260/1262	**230**	0.020 U	0.019 U	0.020 U	0.019 U	**0.052**	**0.15**	**0.86**	0.020 U	0.020 U	0.016 U	0.040 U	0.016 U	0.039 U
Aroclor 1268	0.028 U	0.020 U	0.019 U	0.020 U	0.019 U	0.021 U	0.023 U	0.020 U	0.020 U	0.020 U	0.016 U	0.040 U	0.016 U	0.039 U
Total PCBs	**280**	**0.25**	**0.34**	0.020 U	**0.39**	**0.052**	**0.15**	**1.2**	0.020 U	0.020 U	0.016 U	0.040 U	**0.22**	**0.54**

mg/kg = milligrams per kilogram
PCBs = polychlorinated biphenyls
U = Indicates the compound was undetected at the reported concentration.
Bold = Detected compound.

Note: Sample results are reported as-received, unless otherwise noted.

APPENDIX A

Health and Safety Plan

LANDAU ASSOCIATES
ENVIRONMENTAL | GEOTECHNICAL | NATURAL RESOURCES

WORK LOCATION PERSONNEL PROTECTION AND SAFETY EVALUATION FORM

Attach Pertinent Documents/Data
Fill in Blanks <u>As Appropriate</u>

Job No.:	025082.213		
Prepared by:	Colette Gaona	Reviewed by:	Chris Kimmel
Date:	August 23, 2013	Date:	August 23,2013
Revised by:	Colette Gaona	Reviewed by:	Chris Kimmel
Date:	April 16, 2014	Date:	April 16, 2014

A. WORK LOCATION DESCRIPTION

1. **Project Name:** Boeing – North Boeing Field (NBF)
2. **Location:** Seattle, Washington
3. **Anticipated Activities:** Collecting subsurface soil samples using direct-push methods and hand-auger techniques; collecting groundwater samples; collecting samples from storm drain structures; collecting wipe samples; collecting asphalt and concrete samples; collecting caulk, paint, and other building material samples; cleaning or removing asphalt and concrete, excavating soil.
4. **Size:** Approximately 10 Acres
5. **Surrounding Population:** Industrial, some commercial
6. **Buildings/Homes/Industry:** Industrial and commercial
7. **Topography:** Mostly flat, sloping gently to the west
8. **Anticipated Weather:** Possible rain, 40 to 80 degrees F.
9. **Unusual Features:** None, possible metal, brick, or wood in subsurface.
10. **Site History:** PCBs have been found in or near NBF, which includes aerospace manufacturing, at the adjacent Georgetown Steam Plant, and in the sediments of Slip 4. Activities on or near the NBF property include various industrial activities and aircraft landing and taxiing.

B. HAZARD DESCRIPTION

1. Background Review: ☒ Complete ☐ Partial

If partial, why?

2. Hazardous Level: ☐ B ☐ C ☒ D ☐ Unknown

Justification: Past work at site: Numerous investigations in and around the North Boeing Field.

3. Types of Hazards: (Attach additional sheets as necessary)

A. ☒ Chemical ☒ Inhalation ☐ Explosive
☐ Biological ☒ Ingestion ☐ O2 Def. ☒ Skin Contact

Describe: Contact with contaminated soil, groundwater, surface water, sediment, or building material. Inhalation of dust or vapors. Ingestion of dust.

B. ☒ Physical ☒ Cold Stress ☒ Noise ☒ Heat Stress ☐ Other

Describe: Hazards associated with work around heavy machinery, including street sweeping vehicles, excavation equipment, drill rigs, concrete saws/coring equipment, and man-lifts. Special care must be taken (i.e., placement of reflective cones) when working near or around open storm drain structures to prevent trips and falls. Depending on the weather conditions, heat stress or cold stress may be a factor.

C. ☐ Radiation

Describe:

4. Nature of Hazards:

☒ Air	Describe: Dust from contaminated soil and solids (once dry).
☒ Soil/Sediment	Describe: Dermal contact with or ingestion of contaminated soil and solids.
☒ Surface Water	Describe: Dermal contact with or ingestion of contaminated water in storm drain structures or decontamination water.
☒ Groundwater	Describe: Dermal contact with or ingestion of contaminated groundwater.
☒ Other	Describe: Dermal contact with or ingestion of possible contaminated building materials.

5. Chemical Contaminants of Concern ☐ N/A

Contaminant	Hazards Encountered Upland or Offshore?	PEL-TWA (mg/cu.m)	I.D.L.H. (mg/cu.m)	Source/Quantity Characteristics	Route of Exposure	Symptoms of Acute Exposure	Instruments Used to Monitor Contaminant
PCBs	Soil and storm drain system solids	0.001	5	Concentrations in soil and solids from non-detect to greater than 50 parts per million (ppm)	Dust Inhalation, Ingestion, Dermal Contact, Absorption	Eye irritation, liver damage, carcinogen	Dust Control
PAHs	Soil and storm drain system solids	0.2	Unknown	Possible fuel releases	Inhalation, Absorption, Dermal Contact	Dermatitis, bronchitis, carcinogen	Dust Control
Bis [2-ethylhexyl] phthalate	Soil and storm drain system solids	5.0 ppm	10.0 ppm	Possible fuel releases, or stormwater discharges	Inhalation, Ingestion, Dermal Contact, Absorption	Eye irritation, mucous membranes, liver damage, teratogen, carcinogen	Dust Control
Mercury	Paint chips	0.1	2	Potentially present in paint	Inhalation, Ingestion, Dermal Contact, Absorbtion	Chills, nausea, general malaise, tightness in the chest, chest pains, dyspnea, cough, salivation, and diarrhea	Dust Control
Lead	Paint chips	0.050	100	Potentially present in paint	Inhalation, Ingestion, Dermal Contact, Absorbtion	Effects on the blood , bone marrow , central nervous system , peripheral nervous system and kidneys	Dust Control

6. Physical Hazards of Concern ☐ N/A

Hazard	Description	Location	Procedures Used to Monitor Hazard
Falling	Falls or trips into open storm drain structures or falls while operating a man-lift	At the edges of any storm drain structures and while operating and working from a man-lift	Do not leave storm drain structures open and unattended. Use reflective cones near the edges of open storm drain structures. Man-lifts will be used to sample media, as required. All personnel operating the man-lift will wear OSHA and ANSI approved 5-point safety harness securely connected to the lift via a OSHA and ANSI approved lanyard at all times during lift operation. The lift will be operated by an experienced, competent person that is familiar with and has operated the type of lift to be employed.
Drilling Equipment	Falling or swinging objects, flying debris, rotating augers	At the back of the probe rig within about a 10-ft radius.	Be observant. Minimize time spent close to the probe rig.
Excavation Equipment	Crushing by machinery, flying debris	Within the swing radius of equipment and proximity to moving parts	Be observant. Minimize time spent close to the excavation machinery.
Aircraft	Work locations may be near flight line where moving aircraft may be present.	Near the flight line at North Boeing Field.	Be observant. Minimize time spent near the flight line. Do not enter flight line areas without proper escorts.

7. Work Location Instrument Readings ☒ N/A

Location: _____

Percent O_2: _____ Percent LEL: _____

Radioactivity: _____ PID: _____

FID: _____ Other: _____

Other: _____ Other: _____

Other: _____ Other: _____

Location: _____

Percent O_2: _____ Percent LEL: _____

Radioactivity: _____ PID: _____

FID: _____ Other: _____

Other: _____ Other: _____

Other: _____ Other: _____

Location: _____

Percent O_2: _____ Percent LEL: _____

Radioactivity: _____ PID: _____

FID: _____ Other: _____

Other: _____ Other: _____

Other: _____ Other: _____

Location: _____

Percent O_2: _____ Percent LEL: _____

Radioactivity: _____ PID: _____

FID: _____ Other: _____

Other: _____ Other: _____

Other: _____ Other: _____

8. Hazards Expected In Preparation For Work Assignment ☒ N/A

Describe:

C. PERSONAL PROTECTIVE EQUIPMENT

1. Level of Protection During *Sediment Sampling and Processing Activities and Oversight of Contractor Cleaning Activities*

☐ A ☐ B ☐ C ☒ D

Location/Activity: All

2. Protective Equipment During *Soil Sampling* (specify probable quantity required)

Respirator ☐ N/A

- ☐ SCBA, Airline
- ☐ Full-Face Respirator
- ☐ Half-Face Respirator
- ☐ Escape mask
- ☐ None
- ☐ Other:
- ☐ Other:

Clothing ☐ N/A

- ☐ Fully Encapsulating Suit
- ☐ Chemically Resistant Splash Suit
- ☐ Apron, Specify:
- ☐ Tyvek Coverall or Raingear
- ☐ Saranex Coverall
- ☐ Coverall, Specify
- ☐ Other: life jacket while on boat

Head & Eye ☐ N/A

- ☒ Hard Hat
- ☐ Goggles
- ☐ Face Shield
- ☒ Safety Eyeglasses
- ☐ Other:

Hand Protection ☐ N/A

- ☒ Undergloves; Type: Nitrile
- ☐ Gloves; Type: Solvex
- ☐ Overgloves; Type:
- ☐ None
- ☐ Other:

Foot Protection ☐ N/A

- ☒ Neoprene Safety Boots with Steel Toe/Shank
- ☐ Disposable Over-boots
- ☒ Other: Steel Toe Work Boots

3. Monitoring Equipment ☐ N/A

- ☐ CGI
- ☐ O^2 Meter
- ☐ Rad Survey
- ☐ Detector Tubes (optional)

Type:

- ☐ PID
- ☐ FID
- ☐ Other

D. PERSONNEL DECONTAMINATION (ATTACH DIAGRAM)

☒ Required- Soap and Water – Hands and face ☐ Not Required

EQUIPMENT DECONTAMINATION

☒ Required ☐ Not Required

If required, describe and list equipment:

Any non-disposable sampling equipment will be washed with tap water and Alconox, and rinsed with tap water, prior to each use. Large equipment will be decontaminated using a pressure washer.

Decontamination of equipment that comes in contact with material containing total PCBs greater than or equal to 50 ppm will be performed using hand-wiping with an appropriate solvent in accordance with the decontamination procedures required under 40 C.F.R. § 761.79, or the equipment will be discarded as contaminated TSCA-waste and placed in a roll-off box to be disposed of at a Subtitle C chemical waste landfill permitted to accept TSCA waste under 40 C.F.R. § 761.75. Only parts of the equipment that are reasonably likely to have been in contact with PCB-containing materials will be decontaminated.

E. PERSONNEL

	Name	Work Location Title/Task	Medical Current	Fit Test Current
1.	**Colette Griffith**	**Senior Project Engineer**	☒	☒
2.	**Evelyn Ives**	**Staff Engineer**	☒	☒
3.	**Matt Moroney**	**Staff Scientist**	☒	☒
4.	**Brandon Duncan**	**Senior Staff Engineer**	☒	☒
5.	**Ken Brown**	**Senior Technician**	☒	☒
6.	**Rosemary Trimmer**	**Staff Environmental Specialist**	☒	☒
7.	**Dylan Frazer**	**Senior Staff Geologist**	☒	☒
8.	**Chris Kimmel**	**Senior Geologist; Health & Safety**	☐	☐
9.			☐	☐
10.			☐	☐

Site Safety Coordinator: On-site field staff; Chris Kimmel

F. ACTIVITIES COVERED UNDER THIS PLAN

Task No.	Description	Preliminary Schedule
1	RI/FS Groundwater Monitoring	Starting August 2012; quarterly sampling
2	3-333 Building and Fenceline Area GW Compliance Monitoring	Starting February 2012; quarterly sampling
3	NBF Source Control Sampling	Ongoing
4	NBF 3-818 Building Demolition	2014 - 2015

G. SUBCONTRACTOR'S HEALTH AND SAFETY PROGRAM EVALUATION ☐ N/A

Name and Address of Subcontractor: Lease Crutcher Lewis (Boeing Contracted)

PSC (Boeing Contracted)

Cascade Drilling (Boeing Contracted)

EVALUATION CRITERIA

Item	Adequate	Inadequate	Comments
Medical Surveillance Program	☐	☐	
Personal Protective Equipment Availability	☐	☐	
Onsite Monitoring Equipment Availability	☐	☐	
Safe Working Procedures Specification	☐	☐	
Training Protocols	☐	☐	
Ancillary Support Procedures (if any)	☐	☐	
Emergency Procedures	☐	☐	
Evacuation Procedures Contingency Plan	☐	☐	
Decontamination Procedures Equipment	☐	☐	
Decontamination Procedures Personnel	☐	☐	

GENERAL HEALTH AND SAFETY PROGRAM EVALUATION: ☐ Adequate ☐ Inadequate

Additional Comments:

Evaluation Conducted By: _____ Date: _____

EMERGENCY FACILITIES AND NUMBERS

Hospital:
Harborview Medical Center
325 9th Ave, Seattle, WA
Seattle, WA 98104
(206) 744-3000

Telephone:
Boeing Emergency Line (if on Boeing property) – 206-655-222
Emergency Transportation Systems (Fire, Police, Ambulance) if off Boeing Property – 911
Harborview Medical Center – 206-744-3000

Emergency Routes – Map (Attached)

Emergency Contacts:

Landau Associates Project Manager (Colette Gaona)	425-778-0907
Boeing Environmental Affairs Project Contact (Carl Bach)	206-898-0438

In the event of an emergency, do the following:

1. Call for help as soon as possible. Call 911. Give the following information:
   - WHERE the emergency is – use cross streets or landmarks
   - PHONE NUMBER you are calling from
   - WHAT HAPPENED – type of injury
   - WHAT is being done for the victim(s)
   - YOU HANG UP LAST – let the person you called hang up first.

2. If the victim can be moved, paramedics will transport to the hospital. If the injury or exposure is not life threatening, decontaminate the individual first. If decontamination is not feasible, wrap the individual in a blanket or sheet of plastic prior to transport.

3. Notify the Landau Associates project manager.

4. Notify the Boeing Environmental Affairs Project Contact.

HEALTH AND SAFETY PLAN
APPROVAL/SIGN OFF FORMAT

I have read, understood, and agreed with the information set forth in this Health and Safety Plan (and attachments) and discussed in the Personnel Health and Safety briefing.

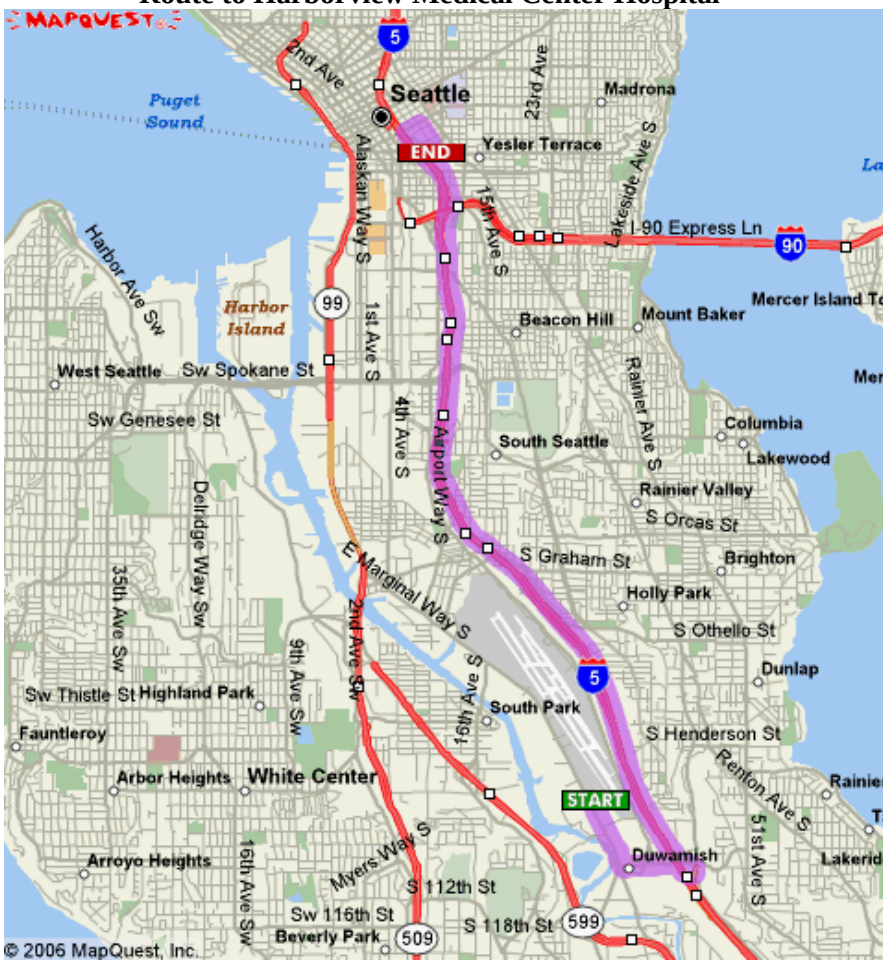
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Site Safety Coordinator	Signature	Date
Christine Kimmel Landau Health and Safety Manager	Signature	April 16, 2014, 2013 Date
Project Manager	Signature	Date

Personnel Health and Safety Briefing Conducted By:

Name	Signature	Date

ROUTE TO HOSPITAL

Route to Harborview Medical Center Hospital



DIRECTIONS

1. Start out going SOUTHEAST on E MARGINAL WAY S toward S NORFOLK ST.
2. Turn LEFT onto S BOEING ACCESS RD.
3. Merge onto I-5 N toward SEATTLE.
4. Take the DEARBORN ST. / JAMES ST. exit- EXIT 164A- toward MADISON ST
5. Take the JAMES ST exit.
6. Turn RIGHT onto JAMES ST.
7. Turn right on Boren Avenue and drive 3 blocks to Broadway
8. Turn right, and then make a quick right turn onto Alder St
9. Continue for three blocks to 8th Avenue